



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,488	02/12/2004	Adnan M.M. Mjalli	41305-296609	2347

7590 08/28/2007
Samuel B. Rollins
Kilpatrick Stockton LLP
1001 West Fourth Street
Winston-Salem, NC 27101

EXAMINER

STOCKTON, LAURA LYNNE

ART UNIT	PAPER NUMBER
----------	--------------

1626

MAIL DATE	DELIVERY MODE
-----------	---------------

08/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/777,488

Applicant(s)

MJALLI ET AL.

Examiner

Laura L. Stockton, Ph.D.

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 16-33, 38, 40 and 47-63 is/are pending in the application.
- 4a) Of the above claim(s) 47-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 16-33, 38 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 1626

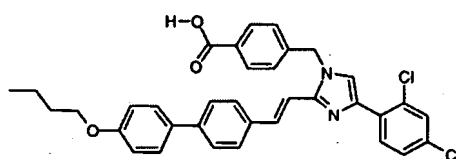
DETAILED ACTION

Claims 1-12, 16-33, 38, 40 and 47-63 are pending in the application.

Election/Restrictions

Applicant's election with traverse of Group III (claims 1-46), and the species of Example 319 found on page 287 of the instant specification (reproduced below), in the reply filed on October 27, 2006 was acknowledged in the previous Office Action.

The structure given in the election was actually the structure of Example 320, as stated by Applicant in the Remarks section of the Amendment filed June 18, 2007. Applicant acknowledges that the correct compound was searched. Therefore, the elected species is Example 320 and not Example 319.

Example 320

4-[2-[2-(4'-butoxy-biphenyl-4-yl)-(E)-vinyl]-4-(2,4-dichloro-phenyl)-imidazol-1-ylmethyl]-benzoic acid

Art Unit: 1626

The claims within elected Group III and the Information Disclosure Statements were examined to the extent that they are readable on the elected species of Example 320. Since no prior art was found on the elected species, the examination was expanded within elected Group III until art was found, in which case, the examination stopped and art has been applied against the claims. Note, M.P.E.P. § 803.02. The subject matter of the expanded search (inclusive of the elected species of Example 320) is as follows:

W is $N(R_2)$;

Ar₁ is an optionally substituted phenyl;

Ar₂ is an optionally substituted phenyl;

T is an optionally substituted phenyl;

L₂ is a direct bond; and

all other variables are as defined.

The claims that are embraced by the subject matter of the expanded search are claims 1-46. The requirement

Art Unit: 1626

was deemed proper and therefore made FINAL in the previous Office Action.

Subject matter not embraced by the above indicated expanded search and Claims 47-63 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention(s), there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 27, 2006.

Rejections and objections made in the previous Office Action that do not appear below have been overcome by Applicant's amendments to the claims. Therefore, arguments pertaining to these rejections and objections will not be addressed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 31 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for those therapeutic agents in which specific examples are given on page 324 of the instant specification {i.e., alkylating agents, antibiotics, etc.}, does not reasonably provide enablement for DPP-IV inhibitors, GLP-1 mimetics, insulin mimetics, fibrates, biologic response modifiers, etc. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

In In re Wands, 8 USPQ2d 1400 (1988), factors to be considered in determining whether a disclosure meets

Art Unit: 1626

the enablement requirement of 35 U.S.C. § 112, first paragraph, have been described. They are:

1. the nature of the invention,
2. the state of the prior art,
3. the predictability or lack thereof in the art,
4. the amount of direction or guidance present,
5. the presence or absence of working examples,
6. the breadth of the claims,
7. the quantity of experimentation needed, and
8. the level of the skill in the art.

The nature of the invention

Applicant is claiming compositions that have additional therapeutic agents. However, some of these agents are not adequately described in the instant specification (i.e., DPP-IV inhibitors, GLP-1 mimetics, insulin mimetics, fibrates, biologic response modifiers, etc.).

The state of the prior art and the predictability or lack thereof in the art

Art Unit: 1626

The state of the prior art is that the pharmacological art involves screening *in vitro* and *in vivo* to determine which compounds exhibit the desired pharmacological activities. There is no absolute predictability even in view of the seemingly high level of skill in the art. The existence of these obstacles establishes that the contemporary knowledge in the art would prevent one of ordinary skill in the art from accepting any therapeutic regimen on its face. It is noted that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. In re Fisher, 427 F.2d 833, 166 USPQ 18 (CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute. In the instant case, the instant claimed invention is highly unpredictable since one skilled in the art would recognize that in regards to pharmaceutical compositions comprising multiple active agents, one

Art Unit: 1626

would need to consider drug-drug interactions. For the preparation of pharmaceutical compositions containing multiple active ingredients, one needs to take into account drug-drug interactions. For example, there are various types of anti-viral agents known in the prior art, which act by differing mechanisms such as virucidal agents, which directly inactivate viruses, antiviral agents, which inhibit viral replication, and immunomodulators, which boost the host immune response. Some of these anti-viral agents may be incompatible with applicant's compound of the formula I due to drug-drug interactions. Taking antiviral drugs with certain other medicines may affect the way the drugs work or may increase the chance of side effects. Obach {Drugs of Today, 39(5), 2003, pages 301-338} discloses that in regards to any given pharmacokinetic drug-drug interaction, the two drugs involved can be considered as either the "perpetrator" drug or the "victim" drug. The perpetrator is the drug that affects the activity

Art Unit: 1626

of an enzyme of protein involved in the metabolism or disposition of the victim drug. The victim drug is the one that either causes side-effects or toxicity due to increased exposure, or lack of efficacy due to exposure decreased to below that required for therapeutic effect (page 302). There are varying mechanisms of drug interactions such as the reduction in the rate of the metabolism of one drug by another, the irreversible inactivation of drug-metabolizing enzymes and the exposure to the victim drug is decreased (pages 303-304). Obach also discloses that there are a number of *in vitro* and *in vivo* experimental approaches to be taken to determine drug-drug interactions (page 304).

The amount of direction or guidance present and the presence or absence of working examples

The only direction or guidance present for the pharmaceutical compositions containing additional therapeutic agents is found on page 324 of the instant specification. While some of the therapeutic agents

Art Unit: 1626

have specific examples, some of the broad therapeutic agents fail to provide any direction or guidance as to the breadth or specific identification of these type of therapeutic agents.

The quantity of experimentation needed

The nature of the pharmaceutical arts is that it involves screening in vitro and in vivo to determine which compounds exhibit the desired pharmacological activities for each of the diseases and disorders instantly claimed. The quantity of experimentation needed would be undue when faced with the lack of direction and guidance present in the instant specification in regards to testing all diseases and disorders generically embraced in the claim language, and when faced with the unpredictability of the pharmaceutical art. Thus, factors such as "sufficient working examples", "the level of skill in the art" and predictability, etc. have been demonstrated to be

Art Unit: 1626

sufficiently lacking in the instant case for the instant method claims.

The level of the skill in the art

Even though the level of skill in the pharmaceutical art is very high, based on the unpredictable nature of the invention and state of the prior art and lack of guidance and direction, one skilled in the art could not use the claimed invention without undue experimentation.

Response to Arguments

Applicant's arguments filed June 18, 2007 have been fully considered but they are not persuasive.

Applicant argues that: (1) a composition containing an additional therapeutic agent can be made and used without undue experimentation; (2) examples of the listed therapeutic agents is found in the instant specification; and (3) the techniques involved in preparing a pharmaceutical formulation as in claim 31

Art Unit: 1626

were well known in the art before the filing date of the instant application and can be readily practiced by one of skill in the art.

All of Applicant's arguments have been considered but have not been found persuasive. As stated above, the instant specification does provide examples of most of the additional therapeutic agents found in instant claim 31. However, some of the broad therapeutic agents fail to provide any direction or guidance as to the breadth or identification of these type of therapeutic agents {i.e., DPP-IV inhibitors}. For all the reasons given above, the rejection is deemed proper and therefore, the rejection is maintained.

Claims 21 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1626

The some of the groups listed in claim 21 lack antecedent basis from currently amended claim 1.

Some of the specie listed in claim 23 {i.e., the second species listed} lack antecedent basis from claim 1.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the

Art Unit: 1626

conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-12, 16-33, 38 and 40 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16, 19-26, 28-52 and 70 of copending Application No. 11/056,498. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claimed compounds are generically described in copending Application No. 11/056,498. See, for example, the first species in claim 32 in copending Application No. 11/056,498.

The indiscriminate selection of "some" among "many" is *prima facie* obvious, In re Lemin, 141 USPQ 814 (1964). The motivation to make the claimed compounds derives from the expectation that structurally similar

Art Unit: 1626

compounds would possess similar activity (e.g., treating obesity).

One skilled in the art would thus be motivated to prepare products embraced by the prior art to arrive at the instant claimed products with the expectation of obtaining additional beneficial products which would be useful in treating, for example, obesity. The instant claimed invention would have been suggested to one skilled in the art and therefore, the instant claimed invention would have been obvious to one skilled in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed June 18, 2007 have been fully considered but they are not persuasive.

Art Unit: 1626

Applicant requested that should all other rejections be obviated, the obviousness-type double patenting rejection should be withdrawn per MPEP 804. In response, the obviousness-type double patenting rejection is maintained since other rejections are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5-7, 10, 11, 16, 21, 24, 26, 32, 33, 38 and 40 are rejected under 35 U.S.C. 102(b) as being

Art Unit: 1626

clearly anticipated by Drefahl et al. {CA 61:651c-h, 1964}.

Drefahl et al. disclose the compound of CA Registry No. 98016-87-6, which is embraced by the instant claimed invention. Therefore, Drefahl et al. anticipate the instant claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-12, 16, 19, 22, 24-33, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heerding et al. {WO 2000/71120}.

Art Unit: 1626

***Determination of the scope and content of the prior art (MPEP
§2141.01)***

Applicant claims imidazole compounds. Heerding et al. (see entire document; particularly pages 2-4 and 9-11; formula (II) on page 4; and especially Examples 69-71 on page 29) teach imidazole compounds that are structurally similar to the instant claimed compounds.

***Ascertainment of the difference between the prior art and the claims
(MPEP §2141.02)***

The difference between the compounds of the prior art and the compounds instantly claimed is that the instant claimed compounds are generically described in the prior art.

***Finding of prima facie obviousness--rational and motivation (MPEP
§2142-2413)***

The indiscriminate selection of "some" among "many" is *prima facie* obvious, In re Lemin, 141 USPQ 814 (1964). The motivation to make the claimed compounds derives from the expectation that structurally similar

Art Unit: 1626

compounds would possess similar activity (e.g., an anti-bacterial agent).

One skilled in the art would thus be motivated to prepare products embraced by the prior art to arrive at the instant claimed products with the expectation of obtaining additional beneficial products which would be useful in treating bacterial infections. The instant claimed invention would have been suggested to one skilled in the art and therefore, the instant claimed invention would have been obvious to one skilled in the art.

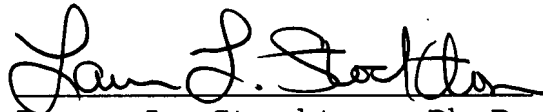
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura L. Stockton whose telephone number is (571) 272-0710. The examiner can normally be reached on Monday-Friday from 6:15 am to 2:45 pm. If the examiner is out of the Office, the examiner's supervisor, Joseph McKane, can be reached on (571) 272-0699.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either

Art Unit: 1626

Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

The Official fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

A handwritten signature in black ink, appearing to read "Laura L. Stockton", is written over a horizontal line.

Laura L. Stockton, Ph.D.

Patent Examiner

Art Unit 1626, Group 1620

Technology Center 1600

August 22, 2007